

**DEPARTMENT OF TRANSPORTATION**

DIVISION OF ENGINEERING SERVICES

Office of Structural Materials

Quality Assurance and Source Inspection



Bay Area Branch  
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Contract #: 04-0120F4Cty: SF/ALA Rte: 80 PM: 13.2/13.9File #: 69.28**WELDING INSPECTION REPORT****Resident Engineer:**Pursell, Gary**Address:** 333 Burma Road**City:** Oakland, CA 94607**Report No:** WIR-012285**Date Inspected:** 24-Feb-2010**Project Name:** SAS Superstructure**OSM Arrival Time:** 700**Prime Contractor:** American Bridge/Fluor Enterprises, a JV**OSM Departure Time:** 1900**Contractor:** Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island **Location:** Shanghai, China

<b>CWI Name:</b>	Li Yang and Wu Zhi Cheng	<b>CWI Present:</b>	Yes	No
<b>Inspected CWI report:</b>	Yes No N/A	<b>Rod Oven in Use:</b>	Yes	No N/A
<b>Electrode to specification:</b>	Yes No N/A	<b>Weld Procedures Followed:</b>	Yes	No N/A
<b>Qualified Welders:</b>	Yes No N/A	<b>Verified Joint Fit-up:</b>	Yes	No N/A
<b>Approved Drawings:</b>	Yes No N/A	<b>Approved WPS:</b>	Yes	No N/A
		<b>Delayed / Cancelled:</b>	Yes	No N/A
<b>Bridge No:</b>	34-0006	<b>Component:</b>	OBG Trial Assembly	

**Summary of Items Observed:**

On this date Caltrans OSM Quality Assurance (QA) Inspector, S. Manjunath Math was present during the time noted above for observations relative to the work being performed.

This QA Inspector randomly observed the following work in progress:

Orthotropic Box Girder (OBG) Trial Assembly Areas

Segment 5AE to 5BE (U-Ribs)

This Quality Assurance (QA) Inspector witnessed final tension verification for U-Rib to U-Rib at Panel Point (PP) 31 and PP 32 for Segment 5AE to 5BE. Inspected the Big Reinforcing Splice Plate installed area at U-Rib location 30th on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00258 Dated February 24, 2010.

Bolt sizes used were M22 x 65 RC Set# DHGM220033 and final torque required was 470 N-m,

Bolt sizes used were M22 x 80 RC Set# DHGM220050 and final torque required was 486 N-m and

Bolt sizes used were M22 x 85 RC Set# DHGM220013 and final torque required was 433 N-m.

Manual Torque wrench was been used with Sr. No. XQ2-675.

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Note: U-Ribs numbering reference taken from Cross Beam as 1st U-Rib and Bike Path side as 39th U-Rib.

### Segment 5BE to 5CE (U-Ribs)

This Quality Assurance (QA) Inspector witnessed final tension verification for U-Rib to U-Rib at Panel Point (PP) 31 and PP 32 for Segment 5BE to 5CE. Inspected the Big Reinforcing Splice Plate installed area at U-Rib locations at 6th, 9th and 11th on a random basis and found the tension to be in general compliance. Inspection was performed against the Notification No. 00258 Dated February 24, 2010.

Bolt sizes used were M22 x 65 RC Set# DHGM220033 and final torque required was 470 N-m,

Bolt sizes used were M22 x 80 RC Set# DHGM220050 and final torque required was 486 N-m and

Bolt sizes used were M22 x 85 RC Set# DHGM220013 and final torque required was 433 N-m.

Manual Torque wrench was been used with Sr. No. XQ2-675.

Note: U-Ribs numbering reference taken from Cross Beam as 1st U-Rib and Bike Path side as 39th U-Rib.

### Segment 5AW and 5BW

This QA Inspector performed Individual Inspection against the Punch List Sr. No. 388, Incident Report 1100 Dated Jan 10, 2010 raised against Flatness Survey for Edge Panel I Stiffener weld joint EP043-001-015 Cross Beam side was deformed between Segment 5AW to 5BW (Shop Segment Splice) between Panel Point (PP) 31 and PP 32. As per the Incident Report it was been observed that Edge Panel I- Rib was deformed by 8mm when measured by 2500mm String Line and 6mm when measured by 600mm Straight edge, acceptable range is L/480mm i.e., 5.2mm.

The location was inspected by the QA and confirmed 3mm only after rectification that ZPMC has fixed the issue.

The Caltrans Lead Inspector was been notified for further action.

### Segment 5BE and 5CE

This QA Inspector performed Individual Inspection against the Punch List Sr. No. 208, Incident Report 727 Dated Sep 10, 2009 raised against Flatness Survey for T-Ribs to T-Ribs web weld between Segment 5BE to 5CE (Shop Segment Splice) between Panel Point (PP) 34 and PP 35. As per the Incident Report it was been observed that T-Rib to T-Rib web weld was misaligned by 5mm, acceptable range is 3mm.

The location was inspected by the QA and confirmed 4mm as on date for the 6th T-Rib from the Longitudinal

Diaphragm Bike Path side and it was evident that ZPMC had not fixed the issue. The Caltrans Lead Inspector was been notified for further action.

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### Segment 7AW-7BW

This Quality Assurance (QA) Inspector observed ZPMC qualified welder 037996 performing Shielded Metal Arc Welding process for weld OBW7A-002 located on PCMK side panel splice weld between OBG segment 7AW and 7BW (cross beam side). ZPMC QC Mr. Wang Li Yang monitoring this welding. The welding variables recorded by QC appeared to comply with the WPS-B-P-2214-B-U2-FCM-1.

### Segment 7AW-7BW

This Quality Assurance (QA) Inspector observed ZPMC qualified welder 068917 performing Shielded Metal Arc Welding process for weld OBW7B-002 located on PCMK side panel splice weld between OBG segment 7AW and 7BW (counter weight side). ZPMC QC Mr. Zhang Hai Tao monitoring this welding. The welding variables recorded by QC appeared to comply with the WPS-B-P-2214-B-U2-FCM-1.

### Segment 6BW-6CW

This Quality Assurance (QA) Inspector observed ZPMC qualified welder 054467 performing Shielded Metal Arc Welding process for weld OBW6C-003 located on PCMK bottom panel splice weld between OBG segment 6AW and 6BW. ZPMC QC Mr. Zhang Hai Tao monitoring this welding. The welding variables recorded by QC appeared to comply with the WPS-345-SMAW-1G (1F) –FCM-Repair-1. Critical weld repair report identified as B-CWR1209.

### Segment 7AE-7BE

This Quality Assurance (QA) Inspector observed ZPMC qualified welder 067183 performing Shielded Metal Arc Welding process for weld OBE7B-003 located on PCMK bottom panel splice weld between OBG segment 7AE and 7BE. ZPMC QC Mr. Wang Li Yang monitoring this welding. The welding variables recorded by QC appeared to comply with the WPS-B-P-2214-B-U2-FCM-1

### Segment 6BW

This Quality Assurance (QA) Inspector observed ZPMC qualified welder 066413 performing Shielded Metal Arc Welding process for weld OBW6F-006 located on PCMK counter weight connection plate. ZPMC QC Mr. Zhong Yong Gang monitoring this welding. The welding variables recorded by QC appeared to comply with the WPS-B-P-2214-B-U4-FCM-1.

Unless otherwise noted, all work observed on this date appeared to generally comply with applicable contract documents.

### Summary of Conversations:

No relevant conversations.

### Comments

This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or

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remedial efforts please contact Eric T Sang 1500-0042-2372, who represents the Office of Structural Materials for your project.

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<b>Inspected By:</b>	Math,Manjunath	Quality Assurance Inspector
<b>Reviewed By:</b>	Miller,Mark	QA Reviewer

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